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ABSTRACT

While the policy of rural school and district consolidation is not totally devoid of worth, its strengths were greatly exaggerated, its weaknesses simply ignored, and its overall merits as a strategy for educational reform grievously oversold. Despite the massive investments made on its behalf, consolidation has not dramatically alleviated the educational problems endemic to rural areas. In Vermont, the nation's most rural state, small high schools seem to be performing as well as their larger counterparts on the one available output measure, percentage of graduates. However, Coleman, Jencks, et al. maintain that consolidation is unlikely to affect either academic achievement or lifetime earnings, that it serves mainly to direct attention away from income redistribution and other improvement efforts. There is not a single study among 14 recent consolidation studies controlling for IQ and socioeconomic effects, which records a consistant, positive correlation between size and achievement. Consolidation opponents have failed to argue diseconomy and have, rather, argued quality of life, etc. in defense of small schools. Asserted over and over again the economy argument was initially believed and then ultimately supported by researchers who were its advocates; since performance outcomes are hard to measure and harder yet to agree upon, the advocates ignored such outcomes as ability to relate well, and focused upon the more measurable outcomes (buildings, equipment, etc.). (JC)

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ECONOMY, EFFICIENCY, AND EQUALITY:

the myths of rural school and district consolidation

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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The National Institute of Education
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ECONOMY, EFFICIENCY, AND EQUALITY:

The Myths of Rural School and District Consolidation

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This paper will appear as Chapter II of a forthcoming book entitled Education in Rural America: A Reassessment of Conventional Wisdom (Jonathan P. Sher, editor) to be published in Spring, 1977 by Westview Press (Boulder, Colorado).

The most successfully implemented educational policy of the past fifty years has been the consolidation of rural schools and school districts. One room, multigraded elementary schools have been eliminated in favor of larger, many-roomed, age-graded schools. Small rural high schools have been closed down and new, centrally-located schools built to which most students are bused. Small school districts have merged with neighboring ones and larger schools have been built within the new district. Table 1 shows just how powerful the trend toward consolidation has been.[1]

TABLE I

Number of Public Schools and Districts 1930-1972

Year	School Districts	Elementary Schools (Total)	(1-Teacher)	Secondary Schools
1930	128,000	238,000	149,000	24,000
1940	117,000	185,000	114,000	25,000
1950	84,000	128,000	60,000	24,500
1960	40,000	92,000	20,000	25,700
1970	18,000	66,000	2,000	25,400
1972	16,960	64,945	1,475	25,922

It should be noted that the slight increase in the absolute number of secondary schools is not at variance with the trend toward consolidation. Rather, it is attributable first, to the construction of secondary school facilities in communities and neighborhoods never before served by such institutions (a side effect of the movement toward universally-available secondary education), and second, to the rise of junior high schools as independent units (a development which added thousands of new institutions to the secondary school category).

That massive consolidation was indeed occurring at the secondary level is evidenced by the fact that the number of traditional (i.e., four-year) high schools (the one kind of secondary school found throughout rural America) was halved during the same period

[1]Source for this table is the Digest of Educational Statistics, 1974, published by the U.S. Office of Education's National Center for Educational Statistics. Figures prior to 1972 have been rounded for easier reading.

in which the average secondary school enrollment tripled.[1]

This policy of rural school and district consolidation was implemented so successfully primarily because of a consensus on the part of education professionals that it represented a reform of unlimited potential for solving most of the problems long considered endemic to rural education.[2] Indeed, this consensus is the hallmark of consolidation research, for while professionals debated technical issues like optimum size and curricular offerings, the basic premise that "bigger is better" was never seriously challenged in the literature. Education professionals genuinely regarded consolidation as a panacea and, consequently, displayed considerable zeal in developing consolidation plans, marshalling favorable evidence, and lobbying on its behalf with state and local policymaking bodies.

The only objections came from rural parents (and occasionally their elected representatives) who either did not want their children going to distant, unfamiliar schools, or who feared the effects of such consolidation on the life and vitality of their individual communities. As Tyack noted:[3]

> "Country people may have been dissatisfied with their school buildings and with an archaic curriculum, but they wanted to control their own schools. In a major study of rural schools in New York State in 1921, for example, 65 percent of rural patrons polled wanted to

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[1]According to the U.S.O.E. figures, the number of traditional high schools declined from 16,460 in 1930 to 6,618 in 1970. Yet, in 1930, the average secondary school had 234 pupils, while in 1950 the figure had risen to 457 pupils, and, as of 1972, the average secondary enrollment was 710 pupils.

[2]The most frequently cited problems were inadequate financing, inefficient and uneconomic operations, low achievement, inadequate staffing, and lack of programmatic quality and diversity.

[3]David B. Tyack, The One Best System (Boston, Mass.: Harvard University Press, 1974), p. 25. Note: The references Tyack cites here are as follows: Robert R. Alford, "School District Reorganization and Community Integration," Harvard Educational Review 30 (Fall 1960):350-71; also, Joint Committee on Rural Schools, G. A. Works, Chairman, Rural School Survey of New York State, William F. Fell, 1922.

> elect their county superintendent; 69 percent opposed consolidation of schools. Subsequent studies showed that rural people in Ohio, Wisconsin, and Idaho also opposed unification. The impetus to consolidate rural schools almost always came from outside the rural community. It was rare to find a local group that 'had sponsored or spearheaded the drive for reorganization.'"

However, even those individuals and communities having fundamental objections to consolidation were willing to concede that consolidated schools would save money through a combination of scale economies and increased operating efficiency. Similarly, everyone simply assumed that the more highly educated teachers and administrators attracted to consolidated schools would inevitably teach and manage better than their less-credentialed counterparts.

In the final analysis though, large new rural schools and school districts were a tangible and effective symbol of the modernization which was increasingly permeating all aspects of rural life in America. In education, modernization itself was a proxy--a proxy for the higher quantity and quality of educational resources (teachers, laboratories, vocational education, etc.) which had been both long desired and long denied. Rural people wanted these resources because they both assumed and had repeatedly been told that such resources would directly lead to increased learning for their children and, thereby, an increased chance of success in their children's lives.

The values of smallness--local control, the close relations possible among professionals, parents, students, and community, and the opportunity for many more students to participate in school activities at a more meaningful level--were discussed but always ultimately sacrificed on the altar of new buildings, more courses, and shiny equipment. All in all, the benefits of consolidation seemed overwhelming and the costs minimal by comparison.

Given the enthusiasm with which professional educators encouraged consolidation, one would expect the empirical evidence supporting their assertions to be overwhelming. It is not. The supporting evidence is incomplete--many critical questions and potential liabilities are simply ignored. It is methodologically unsound, with almost every study open to criticisms severe and significant enough to make their findings extremely suspect. The conclusions are, at best, inconclusive, and, at worst, simply incorrect. In short, there is no strong empirical base to support the assumptions and assertions of school and district consolidation advocates. Thus, while consolidation has become the conventional

wisdom in rural education, careful scrutiny of the available evidence makes the adoption of this particular policy appear to be considerably more conventional than wise.

The rest of this paper will review and analyze this body of evidence and discuss why consolidation has been so popular even in the absence of solid and reliable supporting evidence. The purpose here is not to rewrite history, but rather to make a contribution to the development of rural education today.[1] For, in numerous rural communities nationwide, school consolidation and reorganization programs proceed unabated, the same old arguments continue to be advanced, and faulty evidence is still presented and accepted without careful examination.

The Myth of Economy

Do large schools in rural areas save money?[2] Supposedly, there are both economies of scale and greater efficiencies through improved management in larger schools. Since economies of scale were being widely touted in much of the private sector (including agriculture), consolidation advocates found it reasonable and convenient to assume that these scale economies would also exist in public sector activities like education.[3] The actual evidence from

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[1]Note: It is possible to connect the issues raised in this paper regarding rural consolidation with the current debate over school district reorganization to achieve desegregation in metropolitan areas. This paper does not, however, have anything to contribute to the determination of constitutionally appropriate desegregation strategies. It would be absolutely incorrect to imply that the arguments found in this paper somehow support the continuation of segregated neighborhood schools in urban America.

[2]Some definitions are in order here. First, our definition of a small school is as follows: (1) any elementary school which supports no more than one classroom per grade level (thus, for example, a K-8 school having an average of twenty pupils in each grade, i.e., a total attendance of 180 pupils, fits our definition of smallness); and (2) any high school with a graduating class of less than one hundred pupils (Conant's definition). Second, our definition of rural is the open countryside and all non-metropolitan places having a total population of less than ten thousand residents.

[3]In recent years, a burgeoning literature has developed which raises serious doubts about the validity of the scale economies presumed to exist in the private sector. Examples of this literature include E. F. Schumacher, Small is Beautiful (New York:

education, however, illustrates the drawbacks in being sanguine about making such assumptions.

Economy of scale--that is, the reduction of unit costs as size increases--is both a simple concept and a much abused one. Consolidation proponents have made this concept the correrstone of their arguments for the economic advantages of large schools and districts.

However, the primary problem with the consolidator's research in this area is that it consistently fails to acknowledge the presence of offsetting diseconomies of scale, i.e., new or enlarged costs attributable to increased size of operations. Remembering that there are also diseconomies of scale in consolidation alters the strength of the consolidator's arguments dramatically.

Virtually all the relevant research ignores the additional capital expenditures, salaries, and operating costs associated with the greatly increased transportation required by consolidation. Children who formerly walked to school now must be bused. Children who used to ride for four or five miles per day now must frequently ride twenty or more miles to reach the "centrally-located" school. All of this means more buses, more drivers, higher fuel costs, faster depreciation, etc., than was the case prior to consolidation.

A recent article by White and Tweeten illustrates the importance of considering transportation costs. Using data from Oklahoma schools they estimate optimum district size in rural areas to be eight hundred students, when measuring only educational costs adjusted to a standard quality of program (thirty academic and eight vocational units).[1] However, when transportation costs were included, the optimum district size drops to 675 students.

In fact, the authors indicate that in most rural areas there are virtually no inherent differences in the operational costs of districts anywhere within the range of four to eleven hundred students. They conclude:

Harper & Row, 1973); John M. Blair, Economic Concentration: Structure, Behavior, and Public Policy (New York: Harcourt, Brace, Javanovich, 1974); Barry A. Stein, Size, Efficiency, and Community Enterprise (Washington, D.C.: Center for Community Economic Development, 1974); James Hightower, Susan DeMarco, Susan Sechler, Corporate Giantism in the Food Economy, and other related publications of the Agribusiness Accountability Project, 1972-75.

[1]Fred White and Luther Tweeten, "Optimal School District Size Emphasizing Rural Areas," American Journal of Agricultural Economics (February 1973), p. 51.

> "Cost economies in instruction and attendant functions accrue from larger numbers of students, but cost diseconomies from transportation arise as more students must be brought to school."[1]

White and Tweeten also calculate optimum size in areas having varying student density ratios. Average student density in rural areas is 1.8 transported students per square mile. A positive relationship exists between density and size so that a district with a density of 0.6 transported students per square mile has an optimum size of three hundred, while a more densely populated district with 3.0 students per square mile reaches optimum size at 1,075 students.[2] Once again, these calculations are adjusted to the standard quality of program mentioned earlier.

The point of this research is simple. When transportation diseconomies are included in the determination of overall educational costs in rural areas, the economies from consolidation tend to decrease markedly, or vanish altogether. As transportation costs increase, small school districts in sparsely settled areas are becoming even more economically advantageous.

Transportation is by no means the only area where important diseconomies occur. Purchasing has been cited throughout the research on consolidation as an area which perfectly illustrates how economies of scale can save rural schools and districts money. In fact, however, it perfectly illustrates the shortsightedness of disregarding offsetting diseconomies of scale.

During the 1960s, many small rural school districts banded together to form joint purchasing units so that these presumed scale economies could be captured. Instead of saving money, they discovered that one or more of the following things happened: all the money saved by volume purchasing was lost in distributing the purchases to participating districts, or lost by having to hire new personnel to organize and operate the purchasing/distribution operations, or lost by having to overpurchase supplies in order to get the volume discounts. As Zymelman concluded:

> "Administrators should carefully consider the full costs of central purchasing because savings might not exceed the added costs of distribution. There are also possibilities of delays and loss of flexibility involved in central purchasing. Finally, there is the use of

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[1]Ibid. [2]Ibid., p. 52.

> scarce administrative manpower to manage a purchasing and distribution operation that could be handled in the private sector."[1]

Or, as one school superintendent more bluntly put it: "When we realized just how much time and energy we were spending on a cumbersome system that wasn't saving us a dime anyway, we scrapped the whole joint purchasing idea."[2]

The point is not that economies of scale are non-existent in rural education, but rather that they must be considered in conjunction with existing diseconomies. Doing this not only results in a more accurate method of analyzing economic data, but also reveals that the overall impact of these scale economies is simply far less than intuition would suggest. Nevertheless, a more specific examination of some of the economic issues engendered by rural elementary and secondary school consolidation is informative.

While one study by McLure finds some instructional economies in schools up to three hundred pupils,[3] and Greider reports that peak economy in instruction for elementary schools is achieved with four hundred pupils,[4] there is a remarkable paucity of research which systematically examines cost/size relationships in rural elementary schools. For example, of the twenty-five studies on optimal elementary school size (urban and rural) reviewed in a 1974 Educational Research Service Report, none were based solely on cost data, and only seven even explicitly considered economic factors.[5]

Some estimates can be made even in the absence of reliable, comprehensive research. A 1960 NEA report on one-teacher schools

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[1]Manuel Zymelman, Financing and Efficiency in Education, Nimrod Press 1973, p. 274.

[2]Interview with Mr. Charles Johnson, Superintendent of the Northeast Washington County (Vermont) Supervisory Union, July 1975.

[3]William P. McLure, "School Finance in District Reorganization," Phi Delta Kappan 32 (March 1953):321-26.

[4]Calvin Greider, "Relation of School District Reorganization to Finance in Business Administration," Review of Educational Research 17 (April 1947):167-77.

[5]Suzanne K. Stemnock, Summary of Research on Size of Schools and School Districts, Educational Research Service, Inc., 1974.

indicates that personnel costs (which comprise the bulk of any school's operating budget) were usually considerably lower in one-teacher institutions than in larger, multi-teacher ones.[1] Transportation costs also favored one-teacher schools.

Still, consolidation advocates presumed that there must be some economies in operating only one, as opposed to several, schools in a given community--that, for example, it was cheaper to own and operate one furnace instead of three or four. And indeed, they were correct in assuming that long-term capital costs often favored the consolidated schools.

In the final analysis, though, local circumstance was probably the key determinant of the relative economic merits, not only of one-teacher versus consolidated schools, but also of the consolidation process at all levels of implementation. In communities having four ramshackle one-teacher schools with an average enrollment of less than ten pupils, all located within a ten-square mile area, school consolidation was probably an economically propitious strategy. However, in communities having four well-maintained, one-teacher schools with an average enrollment of approximately twenty students, all spread out over a fifty-square mile area, school consolidation was probably devoid of any economic justification.[2]

Occasionally, rural school and district consolidation did produce minor economic benefits for participating communities. However, consolidation advocates have had an unfortunate predelection toward disregarding the primacy of local circumstance in determining the economic implications of consolidation. By virtue of their exclusion from the vast majority of pro-consolidation literature, one must assume that key local factors like student density, local valuation levels, salary schedules, marginal costs, and cost comparisons for renovation versus new construction, were not thought to be of major importance.

This disregard for local circumstance carried with it the correlary tendency to advocate consolidation for communities in which it was either highly inappropriate or simply unnecessary. The advocates naively argued that if consolidation has been

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[1]Sam M. Lambert et al., One Teacher Schools Today, National Education Association, 1960.

[2]This NEA report states that in 1950, average enrollment in one-teacher schools, nationally, was twenty. And, even in 1960, the pupil-teacher ratio was 17:1.

helpful in school system W, then it must also be good for systems X, Y, and Z.[1] However, America's history of educational reform constitutes a powerful argument against the casual replication of reforms. After years of painful trial and error, educators have come to understand that the success of any reform cannot be divorced from the circumstantial considerations which spawned and nurtured it.

Advocating consolidation for communities in which local circumstances do not warrant it is very much like giving cancer treatments to an individual who doesn't have cancer. Used appropriately, both consolidation and cancer treatments can be powerful (though not always successful) forces for improvement. However, used inappropriately, these powerful agents not only won't cure anything, but may also be harmful in and of themselves to the recipient.

In terms of economy, the situation is not radically different at the secondary level. While the consolidation of high schools having less than two hundred pupils does seem to produce some instruction-related economies,[2] a further examination of the research reveals that most, if not all, of these "savings" can be attributed to increasing pupil-teacher ratios and the failure to account for transportation and other related diseconomies.

In one study by Cohn on Iowa high schools, the actual pupil-teacher ratio in schools under two hundred was 17:1; in schools between two hundred and seven hundred, it was 20:1; and in schools over seven hundred, it was 24:1.[3] Using these ratios and hypothetical

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[1]To make matters worse, consolidation advocates often used urban data or examples to convince rural communities of the necessity of rural consolidation. Thus, the consolidation literature is sprinkled with references to research indicating that optimal district size is 10-20,000, or more. However, careful examination of these citations almost invariably show that they are referring to research done in Los Angeles or metropolitan St. Louis, etc.

[2]Three studies support this. Willard A. Wright and Wilfred H. Pine, Costs of Rural High Schools in Central Kansas, 1956-57, Bulletin 429, Agricultural Experiment Station (Manhattan, Kans.: Kansas State University, 1961); Elchannan Cohn, "Economies of Scale in Iowa High School Operations," Journal of Human Resources (Fall 1968), pp. 422-34; John Riew, "Economies of Scale in High School Operations," Review of Economies and Statistics (August 1966), pp. 280-87.

[3]Ibid., Cohn.

salary figures of $7,000 per teacher and $10,000 per administrator, one can construct a reasonable (albeit simplified) scenario of the costs of rural high school consolidation.

Suppose three rural high schools with 140 pupils each close down and are replaced by one new 420-pupil school. Based on the 17:0 ratio, each of the old high schools would have had eight teachers and one principal. However, given the consolidated school's 20:1 ratio, only twenty-one teachers and one principal would be needed (a net reduction of three teachers and two administrators). In the old small schools, total professional personnel costs would be $198,000. But in the new, consolidated school, these same personnel costs would amount of $157,000--a "savings" of $41,000. This would appear to justify the claims of economy made on consolidation's behalf.

This illusion of economy, however, can only remain intact by ignoring several critical factors. For example, extensive research shows that large consolidated high schools attract a professional staff which characteristically has both higher credentials and higher salary requirements (ranging from several hundred to a few thousand dollars).[1] If we assume a relatively modest average salary differential for professional staff members of $1,000, at least $22,000 of the $41,000 in "savings" vanish. The remaining $19,000 disappears when one remembers to account for consolidation's transportation diseconomies (new bus purchases, new bus drivers on the payroll, higher transportation-related operating and maintenance costs, etc.). Material and equipment costs tend to be higher in consolidated high schools, due primarily to the purchasing of items not normally found in small high schools. Once again, short-run building and maintenance costs are higher in the new school, though consolidation is likely to produce a comparative

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[1]Examples of this research include: P. L. Rajpal, "A Study of Relationships Between Expenditure and Quality Characteristics of Education in Iowa Public Schools" (Ph.D. dissertation, University of Iowa, 1967); Harold D. Patterson, "Relationships Between Size of Secondary Schools and Selected Teacher Characteristics" (Ph.D. dissertation, George Peabody College for Teachers, 1964); K. C. DeGood, "Profile of the Small High School," in Educational Leadership 18 (December 1960):180-82; Jack B. Collingsworth, "An Analysis of the Relationship of Size of Arkansas High Schools to Selected Qualifications of High School Teaching Personnel" (Ph.D. dissertation, University of Arkansas, 1961); Harold J. Morris, "Relationship of School Size to Per Pupil Expenditure in Secondary Schools in Nine Southern States" (Ph.D. dissertation, George Peabody College for Teachers, 1964).

advantage in this area over time. Far from saving money, consolidated high schools must discard professional staff and raise pupil-teacher ratios to maintain even the approximate level of operating expenses found in the smaller schools.[1]

Consolidation advocates would doubtless point out that while all these cost arguments might be true, the important thing is that consolidation brought better resources, and hence a better quality of education to rural communities. Questions of quality will be addressed later in this paper. The only point being discussed here is economy, i.e., the least expensive delivery system for rural education. In light of this discussion, the traditional claim that consolidating rural schools and districts will, ipso facto, save money, appears to have no empirical or logical basis. Thus, it is simply incorrect to assert that consolidation is synonymous with economy.

The Myths of Economy, Efficiency, and Equality in District Reorganization

With the important exception of the White and Tweeten study, the evidence presented thus far has focused primarily on school size and its relationship to cost and quality. Another body of literature considers possible economies and the equalization of expenditures per pupil that come with district reorganization. In fact, there is a voluminous literature on this subject. Much of it is descriptive and assertive in nature, and preaches the gospel of large districts.[2] The campaign has been effective because the United States now has less than 17,000 school districts,

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[1]Had pupil-teacher ratios remained at 17:1 instead of 20:1 in this example, a minimum of $24,000 in additional salary funds would be required. Similarly, adding an assistant principal or a full-time librarian, or full-time athletic coach, or a new specialist would further increase the consolidation deficit.

[2]Samples of this literature are Planning for School District Organization, Great Plains School District Organization Project, 1968, presents several volumes of position papers supporting reorganization; Donald T. Donley, Study Director, Massachusetts Advisory Council on Education, Organizing for a Child's Learning Experience, a Report on a Study of School District Organization in Massachusetts, 1971; and Edward J. Fabian, Committee Chairman, Vermont School District Organization Report (Montpelier, Vt.: May 1975).

whereas in 1930 there were 127,000. Administrators call for still more.:

> I anticipate that within the next ten-year period we will probably see fewer than a total of 10,000 school districts. And at that time we will still be promoting even further reorganization. Ultimately, it is not impossible to think that the people of this country will reduce the number of basic administrative units to not more than about 5,000--one-third to one-fourth of the present number.[1]

The evidence on whether this reorganization has brought the economy, efficiency, and equality so desired is not at all clear. Six studies of district economies of scale generally conclude that where they exist at all, they are quite small.[2] Hirsch concludes:

> This study is unable to find significant economies of scale and suggests that consolidation is unlikely to solve the fiscal problems of schools in urban America. . . . Certainly some rural school districts, and even a few urban ones, could make minor savings if they were big enough to afford more variety in high school offerings and more specialists.[3]

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[1]Testimony of Robert Isenberg, Associate Executive Secretary, American Association of School Administrators, before the Senate Select Committee on Equal Educational Opportunity (Washington, D.C., September 1, 1971), p. 6334.

[2]The six studies reviewed were: Henry J. Schmandt and G. Ross Stephens, "Measuring Municipal Output," National Tax Journal 3 (December 1960):369-75; Werner Hirsch, "Determinants of Public Education Expenditures," National Tax Journal 8 (March 1960):29-40; W. Hirsch, "Expenditure Implications of Metropolitan Growth and Consolidation," Review of Economics and Statistics 41 (August 1959):232-41; H. Thomas James, James A. Kelly, and Walter Garms, Determinants of Educational Expenditures in Large Cities of the U.S. (Palo Alto, Calif.: Stanford University Press, 1966); N. Harrison, "Economy of Scale as a Cost Factor in Financing Public Schools," National Tax Journal 17 (March 1964):92-95; and Herbert J. Kiesling, "Measuring a Local Government Service: A Study of Efficiency of School Districts in New York" (Dissertation, Harvard University, 1965).

[3]Werner Hirsch, "Determinants of Public Education Expenditures," National Tax Journal 13 (March 1960):39.

The savings that occur with scale appear to be in administrative costs. ELSEGIS (Elementary and Secondary General Information Study), a sample survey of 1800 school districts conducted in 1956, reported the following percentages of instructional budget allocated to central administration by district size.[1]

TABLE 2

Percentage of Budget for Administration, by District Size

0-300	300-2499	2500-4999	5000-9999	10,000-24,999	25,000
8.8	6.7	5.2	4.3	3.8	3.8

These figures show a noticeable trend toward relatively higher expenditures for central administration in smaller districts. The magnitude of savings in changing from 0-300 to 301-2499 is $2,100 for each $100,000 of budget. That is not enough to cover the likely diseconomies of transportation. Nor is it enough to warrant the dislocation of large numbers of students.

This sample does, however, raise some interesting points about the nature of efficiency in educational enterprises. Basically, as Zymelman states, "Efficiency and inefficiency are always relative terms."[2] If a school system is attaining more than it used to or more than another system given the same expenditure level, it may accurately be said to have achieved a degree of efficiency. Similarly, if this school system is attaining the same level of performance as it used to or as another system is, given a lower expenditure level, this too can be considered efficient.

With these definitions in mind, let us return to the above example of the apparent administrative "economy and efficiency" achieved through district reorganization. First of all, it must

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[1]G. Kahn and W. Hughes, Statistics for Local Public School District Reorganization to State Aid Distribution Systems, Special Study Eleven, National Education Finance Project, Part II, 1970, pp. 126-34.

[2]Zymelman, Financing and Efficiency in Education.

be remembered that the reported administrative "savings" are not referring to absolute dollar expenditures, but rather to the proportion of total budget allocated to administration. Indeed, in a school district having three hundred pupils and a per pupil expenditure level of $1,000, total administrative costs would be $26,400,[1] whereas a district having three thousand pupils at the same per pupil expenditure level would spend $156,000 on administration.[2]

Yet, the really important point here has to do with efficiency. Spending less to attain the same level of performance is efficient. However, spending less to attain less is a corruption of this concept leading only to false efficiencies. The notion of false efficiency is applicable to this example in two respects.

First, if the school board in the district having three hundred pupils decided that they would allocate just the administrative budget percentage found in the district having three thousand pupils (5.2%), they would discover that they could only spend $15,600 for administration. While they might be able to find someone willing to accept the position at that salary level, it would certainly be a more poorly trained, less experienced, and, presumably, less competent administrator than they could hire with their old administrative allocation of $26,400. Thus, while the small district would spend less, the overwhelming likelihood is that they would receive much less in return. Hence, there is no efficiency to be found here.

The second instance of false efficiency can be found in the larger district. The ELSEGIS study showed that while the proportion of administrative costs to total budget dropped with reorganization, the proportion of administrators to pupils and teachers also dropped dramatically. In other words, each administrator in a larger district is responsible for a far greater number of students and faculty. This means that, of necessity, each student, each teacher, each parent, and each school will receive a much smaller fraction of administrative guidance, assistance, and attention. Compare, for example, the kind of time, attention, and leadership the superintendent in a one-town

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[1]Based on the equation 300 (pupils) x $1000 (per pupil expenditure) x .088 (the average budget percentage allocated for administration in districts up to 300 pupils).

[2]Based on the equation 3000 (pupils) x $1000 (per pupil expenditure) x .052 (the average budget percentage allocated for administration in districts having 3000 pupils).

school district of three hundred pupils can devote to each of the individuals and groups he serves with the kind of service a superintendent in charge of 12,456 students spread over fifty-seven towns can provide (these are actual figures for one proposed superintendency under the state's district reorganization plan in Vermont).[1] These large districts may spend proportionately less, but only because they receive proportionately less in return. Again, this situation presents nothing more than false efficiencies.

The search for district economies of scale often overlooks one of the major determinants of expenditure--assessed valuation. Those districts that have a large tax base relative to the number of pupils will spend more than the district with a low tax base relative to the number of pupils. A recent review of state and local school finance finds that large districts have a lower assessed valuation per pupil than small districts.[2] Unless the large district taxes itself at a higher rate, or receives more state aid, it will spend less per pupil than the smaller district. What appears on the surface to be a relationship between cost and size may, in fact, be a relationship between cost and assessed valuation. Rich (high assessed valuation) districts spend more per pupil than poor (low assessed valuation) districts. If districts are both rich and small, it is not at all appropriate to argue that their higher costs are due to smallness alone.

This is a particularly important point when considering equalization of taxable wealth--a problem that plagues the country today.[3] Despite massive reorganization for four decades, sizable inequities remain between districts in wealth, tax rate, and expenditure regardless of size, type of district, or pattern of state aid.

Comprehensive recent evidence is provided on the question by the National Education Finance Project, a five-volume study of

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[1] Vermont School District Organization Report, pp. 38-39.

[2] Clifford Hooker and Van D. Mueller, The Relationship of School District Reorganization to State Aid Distribution Systems, Special Study Eleven, National Education Finance Project, Part II, 1970, pp. 126-34.

[3] Recent court decisions in New Jersey, California, and Texas have raised the issue. The Supreme Court in Rodriguez v. San Antonio Independent School District has said that the State has no constitutional obligation to equalize wealth per pupil. See Coons, Clune, and Sugarman, Private Wealth and Public Expenditure, Belknap Press, Harvard, 1970, for a detailed analysis fo the inequalities in wealth and recommendations for removing them.

state and local finance in forty-eight states. Sixteen sample states were chosen for a careful evaluation of school district reorganization and state aid distribution systems. Table 3 indicates some of the variation found in unified districts (K-12) in seven of these states.[1]

TABLE 3

Range in Assessed Valuation, Tax Rate, and Expenditure for Unified (K-12) Districts by State, 1968

	Assessed Valuation	Tax Rate (Mills)	Expenditure
California	$3,578-26,054	2.64-6.69	$543-1,134
Colorado	2,031-37,651	20.00-61.18	406-1,351
Iowa	4,718-23,926	31.64-80.32	476-989
Maine	3,697-50,167	11.15-50.92	323-747
Mississippi	1,719-11,971	20.75-42.00	269-591
New York	4,755-161,174	6.04-27.79	693-3,001
Pennsylvania	4,935-60,078	5.54-32.12	471-1,347

Based on an analysis of evidence from all sixteen states, the report concludes in part:[2]

1. Analysis of current expenditures indicates substantial variation exists in expenditure. The variation exists at all levels of organization--non-operating, elementary, secondary and unified. It is as pronounced for low-mean expenditure states as it is for states with high-mean expenditures. States with fewer districts exhibit as much disparity as those with many districts.

2. States with a small number of districts appear to have as much variation in per-student valuation as states with a large number of districts. The

[1]Note: Unified districts are generally considered to be the most equalizing type of organization. Table 3 does not include elementary districts, secondary districts, or any other type which, if included, would further increase the variation.

[2]Hooker and Mueller, The Relationship of School District Reorganization to State Aid Distribution Systems, pp. 178-79.

> variation is found in states which have adopted a single pattern of unified districts, as well as states which have multiple organization schemes. It should be noted that in states with the multiple organization schemes--non-operating, elementar,, secondary and unified combinations--the disparity in amount of valuation per student tends to be greater than in states with the single plan of organization.
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> 3. Little evidence was gathered as a result of this study which would indicate that stability or equity have been achieved in tax structures. Wide variation is prevalent within states. . . . The variation in tax rates seems to be less in states with only unified districts; however, substantial variation still exists.

This evidence demonstrates that equalization of wealth has not been achieved by reorganization. It also suggests that changing population distributions and alterations in the tax base might be better accommodated through state financing mechanisms than by continuing to consolidate into ever larger districts. For example, in Vermont, state planners estimate that to have the wealth per pupil and tax rate combinations that they desire requires a consolidation from 278 to 8 districts.[1] Before contemplating a change in school structure that great and that politically difficult, it would seem reasonable to look seriously at alternative financing mechanisms.

The National Education Finance Project also has interesting information on the nature of redistribution that most frequently occurs in district reorganization. In general, small districts have higher assessed valuation per pupil than large districts, and the large districts have higher tax rates.[2]

North Dakota provides excellent statistics on this point.[3]

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[1]Vermont School District Organization Report, pp. 38-39.

[2]Hooker and Mueller, The Relationship of School District Reorganization, pp. 178-79.

[3]North Dakota Statewide Study of Education, Educational Development for North Dakota, 1967-75, "The Overview" (Grand Forks, N.D.: University of North Dakota, 1967), pp. 15-17.

TABLE 4

School	Assessed Valuation	Pupil Tax Rate
168 One-room rural districts	13,152	34.2 mills
81 Graded elementary districts	8,890	47.2 mills
67 Non-accredited 12-grade	5,632	41.12 mills
211 Accredited 12-grade	4,341	60.88 mills

If reorganization occurs in North Dakota, children from one-room rural districts will have less wealth backing them and their parents will pay higher taxes. The standard image of a very small, very poor, rural school district combining with larger, richer neighbors, and receiving the benefits of increased resources is not always accurate. Whatever the benefits of district consolidation, rural residents have paid for them through higher taxes.

Again, those who support consolidation are no doubt impatient with an analysis that considers only taxes, valuations, and expenditure. To them, the important point is that reorganization brought more resources, more variety, and more choice to students. Well, maybe. But there is more to say.

Krietlow's longitudinal data on school district reorganization shows an interesting trend. Reorganized districts had an advantage in several kinds of resources immediately after they reorganized, but over time, the non-reorganized district tended to obtain the same resources.[1] The general national commitment to education has meant steadily increasing resources for everyone, regardless of organizational pattern. The notion that smaller districts had to spend "exorbitant" amounts to secure needed resources is simply without foundation in the available evidence. No compelling evidence exists which proves that the consolidation of rural schools and school districts produced any net economic advantages. Thus, any effort to legitimize the massive rural consolidation programs implemented since 1930 must find its rationale somewhere other than the economics of the situation.

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[1]Burton Krietlow, Long Term Study of Educational Effectiveness of Newly Formed Centralized School Districts in Rural Areas, Reports 1, 2, and 3. (Madison, Wis.: University of Wisconsin, 1962, 1966, 1971).

The Myth of Improved Quality

Supporters of consolidation are, no doubt, very impatient now with all this talk of money and no talk of better facilities and teaching. The really important thing, they have argued, is that consolidation improved the quality of education. Facilities were newer and better equipped; teachers were better educated and trained; there were more choices available for students, such as foreign languages, music, art, and vocational courses. Because of these resources, students learned more and had a better chance in life. This argument is in two states: first, that consolidated schools provide more and better resources; and second, that those resources improve learning and life chances.

Much research has been done which tries to document that larger schools have more of everything. The most widely publicized and highly regarded research supporting this argument was James Bryant Conant's study of the American high school published in 1959.[1] The timing of publication soon after the launch of the Russian Sputnick, and Conant's reputation as the elder statesman of educational policy combined to give his conclusions the weight of tremendous authority. In the study's foreword, John Gardner (then President of the Carnegie Corp. of New York, and shortly thereafter appointed as Secretary of HEW) asserted that:

> "It would be difficult to overestimate the importance of [Conant's] report at this time. Hundreds of thousands of Americans all over the country are concerned about their schools, wondering what to do about them, seeking answers, hoping for guidance. Mr. Conant has provided that guidance. It is for this reason that some of us believe that Mr. Conant, after a lifetime of distinguished contributions to the nation, has in this study made his greatest contribution of all . . .
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> "If I had to recommend a single piece of reading to all Americans who want to improve their schools, I would ask them to read this report."[2]

The public response to the Conant report was uniformly enthusiastic For example, the Louisville Courier-Journal said

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[1] James Bryant Conant, The American High School Today, Carnegie Series in American Education (New York: McGraw-Hill, 1959).

[2] Ibid.

that ". . . the Conant report is a bombshell. Its import is likely to determine for a generation the direction in which public secondary education develops."[1] That this assessment was not just naive hyperbole is verified by Callahan's study of the social forces affecting public school organization and administration in America.[2] As Callahan states:

> "It was also predictable that [school administrators and policymakers] would welcome and quickly adopt James B. Conant's recommendations for change in the high schools, for, with his great stature in the country, his suggestions were made to order for defense. Any superintendent who could say that he was adopting Conant's recommendations, or better yet, that his school system had already been following them for years, was almost impregnable."[3]

The most significant conclusion of the Conant report was that small high schools with less than one hundred in the graduating class could not offer a comprehensive curriculum satisfying future scientists, as well as future clerks. Sufficient size was a prerequisite to the other twenty-one recommendations made to improve the high school. As Conant put it: "The number of small high schools must be drastically reduced through district reorganization. Aside from this important change, I believe no radical alteration in the basic pattern of American education is necessary in order to improve our public high schools."[4] In other words, simply making schools bigger would make them better.

Conant began by asking whether the comprehensive high school was a feasible idea. "Can a school at one and the same time provide a good general education for all the pupils as future citizens of a democracy, provide elective programs for the majority to develop useful skills, and educate adequately those with a talent for handling advanced academic subjects--particularly foreign languages and advanced mathematics?"[5] The emphasis of the study quickly fell to the last part of the question--the development of the academically talented.

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[1]Ibid.

[2]Raymond Callahan, Education and the Cult of Efficiency (Chicago, Ill.: University of Chicago Press, 1962).

[3]Ibid.

[4]Conant, The American High School Today, p. 40.

[5]Ibid., p. 15.

Various sources were consulted to determine which schools outside metropolitan areas were good comprehensive high schools. In twenty-six states, a total of 103 schools were selected. Conant was convinced even before doing this study that: "a high school must have a graduating class of at least one hundred to function adequately as a comprehensive school."[1] For that reason, he generally visited schools having graduating classes of considerably more than one hundred. In the book, he reports in-depth on twenty-two schools, only three of which have one hundred or less in the graduating class.

If the assumption that small high schools are less comprehensive is correct, one might expect those three schools to be noticeably different. They are not. The summary lists fifteen items that a good, comprehensive school should have, such as "adequate instruction in social studies," "adequate non-academic elective programs," "individualized programs," "guidance services," and "good student morale."[2] None of the twenty-two schools got a perfect score of fifteen. Large schools ranked both best and worst. The mean score for the group was 8.9. The three small schools evaluated (A with ninety-five seniors, O with seventy-three seniors, and P with one hundred seniors) have scores of eleven, eight, and eight, respectively, and thus are near, or above, the mean in each case.[3]

Analyzing the checklist in this manner has problems--notably that of weighting each item equally--but the point is that the three small schools do not (even given Conant's own criteria) support his strongly-held view that small schools are not comprehensive. He lists eight of the twenty-two schools that "satisfactorily fulfill" the objectives of the comprehensive school: schools A and P are on that list.[4]

Even if small schools are comprehensive, perhaps they really shortchange the academically talented. Conant asked each school to do an academic inventory on the graduating class of 1957. Eight positive responses for each school were possible on the inventory. No school scored eight. Two schools had seven positive responses--School A (with a graduating class of ninety-five), and School C.

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[1]Ibid., p. 14. [2]Ibid., pp. 24-25.

[3]Note: One of the study's ironies is that schools O and P are described as rural consolidated schools.

[4]Ibid., p. 29.

The mean response for schools was 3.8. School O and P had three positive responses each. School V (with 797 graduates) had no positive responses. On the basis of this evidence, small school A does very well indeed; O and P are fair, but by no means the worst.[1]

At another point in the report, Conant announces that he is "convinced [that] small high schools can be satisfactory only at exorbitant expense."[2] He presents no cost figures to support his statement. The earlier analysis in this paper regarding the economics of consolidation suggests that such a statement is greatly exaggerated, if not entirely false.

Conant began with the assumption that small schools could not be comprehensive and concluded that his study supported that view. It does not. What the study does indicate is great variation among schools, but it does not provide much help as to why that variation occurs. No evidence is presented to support the notion that size explains a lack of comprehensiveness, partly because it was believed true a priori and few small schools were visited. In addition, the small schools that were visited contradict the assumption. School A, with ninety-five graduating seniors, is better on the measures used than practically every other school. Given that evidence, the widely acclaimed conclusion of the Conant Report is certainly incomplete and probably incorrect.

Recent evidence also refutes Conant's conclusions. For example, in the nation's most rural state (Vermont)[3] the small high schools appear to be performing every bit as well as their larger counterparts on the one available output measure--percentage of graduates entering college.[4]

In 1973-74, there were fifty-nine public senior high schools in Vermont, ranging in size of graduating class from 14 to 491. Thirty-four high schools had less than Conant's required one hundred students in the graduating class, and twenty-five had more than one hundred. Of the ten high schools having the greatest

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[1]Ibid, pp. 114-117. [2]Ibid., p. 37.

[3]According to the 1970 U.S. Census.

[4]Note: In order to ensure comparability in Conant's study, no controls for I.Q. or family socio-economic status are used here. As evidence presented later in this paper indicates, using such controls tends only to further the comparative advantage of small schools.

percentage of graduates entering college, six were small schools and only four were large.[1]

Nor were these results obtained at the "exorbitant expense" Conant predicted. In 1973-74, the average high school per pupil operating cost in Vermont was $1,210.72. For the six best small Vermont high schools (as determined by this one outcome measure), the average operating cost was $1,170.88, whereas the average operating cost for the four best large ones was $1,395.97.[2]

Conant was concerned about the resources provided in high schools. His assumption, and the assumption of all who shared Conant's emphasis on the quantity of resources, was that in-school achievement and success in later life were both directly related to the possession of certain key resources.[3]

However, recent research by Coleman and others has suggested that most of these "key" resources (inputs) are very poor explanatory variables for school achievement (output).[4] In fact, educational research has failed to identify a single resource or practice which is consistently effective in bolstering achievement. Moreover, the presumed linkage between school success and economic success in later life has been shown to be considerably weaker than common sense would suggest.[5]

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[1]Enrollment and performance data used here is from "A Study of Vermont High School Graduates: Class of 1974," Statistics and Information Division, Vermont State Department of Education, January 1975.

[2]All cost data is from "A Comparison of Tuition Rates and Per Pupil Costs for Tuition Purposes, 1973-74," Statistics and Information Division, Vermont State Department of Education, January 1975.

[3]The key resources most often identified include high per pupil expenditures, advanced curricular offerings, faculty salaries, experience, and credentials, new equipment and facilities, and the number of books in the school library.

[4]James Coleman et al., Equality of Educational Opportunity (Washington, D.C.: U.S. Government Printing Office, 1966). Frederick Mosteller and Daniel P. Moynihan, eds., On Equality of Educational Opportunity (New York: Random House, 1972). Christopher Jencks et al., Inequality (New York: Basic Books, 1972).

[5]See particularly Jencks et al., Inequality, and Donald M. Levine and Mary Jo Bane, The Inequality Controversy (New York: Basic Books, 1975).

TABLE 5

Comparison of Size/Cost Data for 10 Vermont Public High Schools
Having the Highest Percentage of 1974
Graduates Entering College[1]

School Name	Percent Entering College	Total Number of Graduates	Per Pupil Operating Costs
Montpelier H.S.	68%	146	$1,613.69
S. Burlington H.S.	57%	245	1,235.76
Craftsbury Academy[2]	56%	16	1,300.27
Wilmington H.S.	56%	16	1,619.41
Chelsea H.S.	48%	33	1,031.90
Arlington H.S.	47%	43	1,048.73
Poultney H.S.	47%	60	875.53
Woodstock H.S.	47%	123	1,130.26
Champlain Valley H.S.	47%	224	1,631.19
Wallingford H.S.	45%	29	1,149.46

[1]Note: According to the National Center for Educational Statistics, approximately 40 percent of all 1974 high school graduates nationwide went on directly to college.

[2]Despite the title of "Academy" this high school is, in fact, a public one.

Even those whose faith in the ultimate value of better resources remains intact have come to concede that the mere possession of such resources is not sufficient to alter achievement results. Rather, they contend, the critical factor is the manner, purpose, and competence with which whatever resources possessed are utilized.[1] In either case, the implications for rural school and district consolidation (which was largely designed as a strategy for improving educational inputs) are clear.

If one believes Coleman, Jencks et al., then rural consolidation becomes little more than an exercise in futility. Since the kind of structural reforms accomplished through consolidation are unlikely to positively affect either academic achievement or lifetime earnings, the Coleman-Jencks school would conclude that it is much ado about nothing and serves mainly to divert attention away from both the business of redistributing income and the effort to make the "internal life" of schools a more pleasant proposition for all concerned.

If, on the other hand, one believes that proper utilization of existing resources is the central issue, then rural consolidation is useful precisely to the extent that it actually results in a more effective utilization pattern. Thus, local circumstance once again becomes paramount. In some communities, consolidation could conceivably help effect an improved utilization of resources. However, there is absolutely no empirical or logical basis for believing either that consolidation is synonymous with better utilization or that small rural schools cannot attain the highest possible level of resource effectiveness. If anything, it seems likely that since small rural schools are less complex and more manageable institutions, they would have an inherent advantage in efficiently utilizing the resources they do possess.

Those who pushed for consolidation from 1930 to 1965 did not have the benefit of this research, but they did have access to a large number of studies on achievement in elementary and high school and success in college.

Many of these studies compared achievement scores of children in small schools with children in large schools.[2] However, only

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[1]See, for example, Charles E. Silberman, Crisis in the Classroom (New York: Random House, 1970); Neil Postman and Charles Weingartner, The School Book (New York: Delacorte Press, 1973); and Harvey A. Averich et al., How Effective is Schooling? A Critical Review of Research, Educational Technology Publications, The Rand Corporation, 1974.

[2]See Rachel Bussard, Qualifying Paper, Graduate School of Education (Boston, Mass.: Harvard University, 1972), pp. 54-55,

a handful of the studies controlled for variables, like socio-economic status (SES) or IQ, that also affect achievement.[1] This fact is critically important in evaluating the empirical evidence on consolidation. Indeed, a detailed examination of this research reveals a classic example of the importance of controlling for IQ and social class.

In most of the early consolidation studies, which did not attempt to control for IQ and SES, the results showed varying degrees of positive correlation between school (or district) size and student achievement.[2] Consequently, many researchers like Feldt (who employed no controls) were quick to conclude that: "The pupil who received his elementary education in a rural school and his secondary education in a small high school of one hundred or fewer students suffers a form of educational double jeopardy."[3]

However, in recent years, researchers have begun controlling for IQ and social class. The effect of this development has been nothing less than a complete reversal of the traditional conclusions about the correlation between size and achievement. In fact, of the recent, controlled studies, there is not a single one which records a consistent, positive correlation between size and achievement, independent of IQ and social class.[4]

Examples of this new phenomena abound. Coleman et al. found school size to be "a variable not significantly correlated with

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for a summary table of fourteen different studies. The most frequently cited of these studies are William H. Drier, "Differential Achievement of Rural Graded and Ungraded School Pupils," Journal of Educational Research, vol. 28, pp. 175-86; A. M. Hieronymous, Achievement in the Basic Skills as Related to Size of School and Type of Organization, Monograph (Iowa City, Ia.: State University of Iowa, School of Education, 1949); and Burton Krietlow, Long Term Study of Educational Effectiveness of Newly Formed Centralized School Districts in Rural Areas, Reports 1, 2, and 3. (Madison, Wis.: University of Wisconsin, 1962, 1966, and 1971).

[1]Note: Only four of the fourteen took IQ and social class class into account in some way.

[2]See Bussard, Qualifying Paper, pp. 54-55.

[3]Leonard S. Feldt, "Relationship Between Pupil Achievement and High School Size," 1960, p. 8. (Mimeographed.)

[4]Source is Timothy Weaver, "The Case Against the Preston County Comprehensive Facilities Plan for Consolidating the Schools," Unpublished Paper, Boston University, 1975.

achievement."[1] He also found that "size of the 12th grade is negatively correlated with verbal achievement . . . each additional 200 students is associated with a decline of one-fifth grade level in achievement."[2] Summers and Wolfe indicate that "higher achievement results correlated with smaller schools at both the elementary and senior high school levels."[3] Alkins concluded that "neither district size nor financial inputs showed any significant relationship to student achievement results."[4] Thrasher and Turner "found no significant differences on Iowa test scores that could be attributed to small school size" and "found no differences in grade point averages of small versus large school graduates in freshman year of college."[5]

In another major survey of the effects of school size on achievement outcomes, Herbert H. Kiesling found size of school to be negatively related to achievement.[6] Kiesling found, for example, at the 12th grade level, achievement improved up to about 1200 to 1600 students, but when controlled for background of the child, the child's intelligence and school expenditures, it was discovered the relationship was converted from positive to negative. The author explains his findings as follows:

> "Thus many of the gross relationships, especially in grade 12, seem to attain a maximum at some size level in the neighborhood of 1200 to 1600 pupils in ADA and then to decline, while after the three control variables are introduced, the entire relationship becomes negative and linear. A possible explanation for this is that medium-sized schools exhibit better performance because they have pupils who are either more intelligent or come from better socio-economic backgrounds, or both."[7]

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[1]Coleman, Equality of Educational Opportunity.

[2]Ibid.

[3]A Summers and B. Wolfe, "Which School Resources Help Learning?" Business Review (February 1975).

[4]M. Alkin, Economy of Scale in the Production of Selected Educational Outcomes, AERA (1968).

[5]Thrasher and Turner, School Size Does Make a Difference (San Diego, Calif.: Institute for Educational Management, 1970), as reported by Ian Templeton, "School Size," Educational Management Review Series, ED 072 505 (December 1972).

[6]Herbert J. Kiesling, High School Size and Cost Factors, Report of U.S. DHEW Project No. 6-1590, March 1968.

[7]Ibid., p. 77.

Because of its rural focus, the 1968 report on factors affecting freshman year college success by Dr. Richard Raymond also has relevance here.[1] Dr. Raymond, a professor at West Virginia University, studied approximately five thousand freshman students at WVU.[2]

Raymond used overall scores on the American Testing Program (ACT) and freshman year grade point averages as his measures of freshman performance. He then analyzed his data while controlling for a variety of financial, organizational, and social class variables (including a proxy for consolidation).

His finding was that teacher salary differences at the elementary, but not high school, level significantly correlated with freshman performance, independent of family and community factors. However, consolidation and all other school-based factors were found to be unrelated to these performance measures. Dr. Raymond concludes that educational and organizational differences between W. Virginia county school systems (as measured here) do not produce differences in freshman performance. The differences which are significant are those beyond the control of schools: "The portion of the quality differences, as they have been measured, which result from differences in population characteristics falls largely outside of the control of the school system. This portion is caused by differences in student ability and home environment."[3]

Some of the most extensive research on school consolidation has been done by Burton Krietlow at the University of Wisconsin.[4] Krietlow began a longitudinal study of Wisconsin communities undergoing reorganization in 1949. He chose five reorganized districts (R districts) and matched them with five districts not reorganized (NR districts) based on economic and demographic characteristics. Measures were taken on students in the first grade in all districts and the cohort was followed until five years after high school graduation. Data was collected on the schools, communities, teachers,

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[1]Richard Raymond, "Determinants of Primary and Secondary Education in West Virginia," Journal of Human Resources, vol. 3, no. 4 (Fall 1968), pp. 450-70.

[2]Raymond's study population were those graduates from West Virginia's fifty-five county school systems enrolling at West Virginia University during the early and mid 1960s.

[3]Ibid., p. 467.

[4]Krietlow, Long Term Study of Educational Effectiveness of Newly Formed Centralized School Districts in Rural Areas.

and parents of the students in the cohort. A replication study following the same pattern began five years after initial data collection in each district.

The Long Term Study suffers from the problems of any longitudinal study--the inability to control very many of the factors that operate over time. Four of the five non-reorganized communities (NR) reorganized over the years and 40 percent of the students moved or dropped out. The world changed a lot in twenty years, and it is extremely difficult to sort out the effects of one variable--reorganization--from other changes that occurred over time. Despite these difficulties, the data collection has been done carefully and the conclusions contain the proper caveats.

Krietlow's results are similar to those found throughout the other research of this kind. Significant differences in achievement appear at the 6th grade level between R and NR districts favoring the R.[1] They persist at the 9th grade level, and some remain at grade 12--notably reading and biological science. Significant differences appear favoring the reorganized district on IQ measures at the 12th grade level.[2] However, controlling for SES and IQ at grade 6 wipes out the observed differences in reading and science achievement at grade 12.[3] Krietlow does not report what happened to mental age differences at grade 12 with controls. These results illustrate graphically how important it is to try to separate influences on achievement. Without IQ and SES considered, reorganized schools are better on achievement measures. But the children in these schools are more affluent and do better on intelligence measures.[4] These other factors are certainly plausible explainers of achievement differences, no doubt even more so than size of school or district.

The Long Term Study also chose a replication cohort of 1st graders five years after the study began.[5] Comparing differences in achievement between original and replication cohorts within non-reorganized and reorganized districts separates, in part, the general trend that would increase achievement from those caused by reorganization. Using a total achievement measure, Krietlow finds significant increases in achievement for the replication cohorts in all districts, regardless of district type. Although the reorganized district scores remain higher than the non-reorganized, Krietlow is unwilling to ascribe that difference to reorganization:

"Besides reorganization, significant differences found in favor of the reorganized sample may not be due

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[1]Ibid. [2]Ibid. [3]Ibid. [4]Ibid. [5]Ibid.

> entirely to reorganization, per se, but to hidden variables such as parents' socio-economic status, level of education, number of children in the family, rate of teacher turnover, innovations in the curriculum, and a general upturn in the values society places in education. . . . The results of this investigation strongly suggest that the significant differences found in favor of a reorganized sample should not be attributed to reorganization alone."[1]

Another fondly-held belief among consolidation advocates is that students who graduate from large high schools do better in college than children from small high schools. The reasoning has face validity. Larger high schools usually offer a greater variety of courses, have more credentialed teachers, and provide the more impersonal social relations characteristic of college life. All of these factors would seem to positively influence college success.

Once again, the evidence simply does not support the consolidation advocates' stance. Of the ten studies reviewed on this topic, six indicate that size of high school does not correlate significantly with college success;[2] two found a positive correlation between size and success;[3] and two others have mixed results,

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[1]Ibid.

[2]Thrasher and Turner, School Size Does Make a Difference; Charles W. Bernhardt, "The Effect of Per Pupil Expenditure and High School Size Upon Academic Success in College," Ph.D. dissertation, Ball State University, 1968; J. R. Bertrand, "Relation Between Enrollment of High School from which Students Graduated and Academic Achievement of Agriculture Students at Texas A&M," Journal of Experimental Education, vol. 25, pp. 59-69; F. A. Burger, Cultural Forces and Academic Success in College Freshmen, Bulletin of the Bureau of School Services (Lexington, Ky.: University of Kentucky, 1960), vol. 33, no. 1 (September); D. P. Hoyt, "Size of High School and College Grades," Personnel and Guidance Journal, vol. 37, pp. 569-73; I. I. Lathrop, "Scholastic Achievement at Iowa State College Associated with High School Size and Course Pattern," Journal of Experimental Education, vol. 29, pp. 37-48.

[3]J. C. Bledore, "An Analysis of the Relationship of Size of High School to Marks Received by Graduates in the First Year of College," Journal of Educational Sociology, vol. 26, pp. 414-18; L. H. Thomberg, "College Scholarships and Size of High School," School and Society, vol. 20. pp. 189-92.

finding size related to freshman grades but not to later success.[1] The literature reviews done by some other authors show the same inconclusiveness in studies not reviewed for this paper.[2] The variability in results makes size extremely suspect as an explanatory variable. If it really made a difference, the results would be more consistent.

In short, we simply do not know from this research on collegiate success what groups of students from within a given size category will consistently go on to college and perform successfully once there. Thus, on the basis of the available evidence, it would be absolutely incorrect to assert that consolidation improves a student's chance for success in college.

For those who believe that the benefits of consolidation are more intangible, the evidence will offer little solace. Krietlow found differences in post-high school aspirations, and differences in what the students actually did after graduation.[3] Generally speaking, students in non-reorganized districts were more likely than students in reorganized districts to choose employment. The reorganized students were more likely to choose college. The reasons for this are not clear from Krietlow's work, unless one simply accepts that something about reorganization (such as its earlier adoption by high SES communities) increases aspirations.

Sewell and Haller's work with a body of data collected on 10,000 high school seniors in Wisconsin illuminates some factors that may be at work.[4] The question they asked was what affects educational aspirations. They concluded that a whole list of factors were important: Whether a student's friends were going

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[1]P. S. Droyer, "Some Suggestions Concerning the Relationship Existing Between Size of High School Attended and Success in College," Journal of Education Research, vol. 32, pp. 271-80.

[2]H. F. Garratt, "A Review and Interpretation of Investigations of Factors Related to Scholastic Success in Colleges of Agriculture and Science and Teachers' Colleges," Journal of Experimental Education, vol. 18, pp. 91-138.

[3]Krietlow, Long Term Study of Educational Effectiveness of Newly Formed Centralized School Districts in Rural Areas.

[4]William H. Sewell and Arthur O. Haller, "Educational and Occupational Perspectives of Farm and Rural Youth." In Rural Youth in Crisis: Facts, Myths and Social Change, edited by Lee Burchinal (Washington, D.C.: U.S. Government Printing Office, 1964), pp. 149-72.

to college, whether a high proportion of the senior class was going on, whether his teachers encouraged him to plan on college, whether he discussed plans with teachers and counselors. Of all variables studied by Sewell and Haller, size of school differentiates less well between college plans and no college plans, than all other variables.[1]

The lesson here would seem to be that college plans are determined, in part, by a pattern of expectations possible in both large and small schools. Those expectations are affected by what teachers and students believe about themselves. If teachers and students believe a consolidated school prepares students for college, the environment will probably act to encourage them to go. But Sewell and Haller's work seems to indicate that if the same pattern of expectations appears in a small school, the students there will also aspire to college.

Still, there is a great deal more that needs to be said about the relationships among size, consolidation, and a variety of personal, social, and other "non-academic" qualities.

Roger G. Barker and Paul V. Gump in their remarkable book, Big School, Small School, report several significant and important findings relevant to the question of quality of the school experience in small schools versus larger consolidated schools.[2] The Kansas schools studied by Barker and Gump range in size from a low of thirty-five students in grades 9-12, to a high of 2,287 students. Although the largest school in this study exceeds that of most rural schools, 213 out of the total of 218 schools studied by Barker and Gump fell within the range 42 to 889 average enrollments in grades 9-12. Thus, the vast majority of schools and students were comparable to conditions which exist or are being proposed throughout rural America.

The findings in the Barker and Gump book may be summarized as follows: The actual proportion of students who can participate in the essential activities which support the academic program, the quality of that involvement, and the satisfaction with that involvement, clearly favor the smaller local school over the larger consolidated school. The findings of J. Campbell, presented

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[1] Ibid.

[2] Roger G. Barker and Paul V. Gump, Big School, Small School (Palo Alto, Calif.: Stanford University Press, 1964).

later, corroborate this general conclusion. As an example of the book's general finding, the authors state: "The proportion of students who participated in district music festivals, and dramatic, journalistic and student government competitions reach a peak in high schools with enrollments between 61 and 150. The proportion of participants was three to twenty times as great in the small schools as in the largest school. The number of extracurricular activities and kinds of activities engaged during their four-year high school careers was twice as great in the small as in the large schools."[1]

The frequency of leadership involvements clearly favor the small schools. The authors state: "Furthermore, a much larger proportion of the small school students held positions of importance and responsibility in the behavior settings they entered, and they occupied these positions in more varieties of settings than students of the large school."[2]

With regard to satisfaction, small schools reported "more satisfactions relating to the development of competence, to being challenged, to engaging in important actions, to being involved in group activities, and to achieving moral and cultural values. Large schools reported more satisfaction with 'gaining points' via participation."[3]

Writing in the same book, W. J. Campbell concludes:

> "This study of consolidation's effects suggests that if the small local students were transferred to a county high school they would probably undergo the following changes in experience: an increase in the number of school settings penetrated to the entry level; and a decrease in (1) external pressures aimed at increasing their participation in extracurricular activities; (2) sense of personal responsibility associated with extracurricular activities; (3) number of school settings penetrated to the performance level; (4) range of supervisory settings penetrated; (5) number of school settings judged to be most worthwhile; and (6) number of satisfactions associated with physical well-being, acquired knowledge and developing intellectual interests, developing a self-concept and zest for living."[4]

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[1]Ibid., p. 196. [2]Ibid., p. 196. [3]Ibid., p. 197.

[4]Ibid., p. 152.

These differences between big schools and small schools are important differences because they represent qualities generally acknowledged by educators to be among the important goals of schooling. Moreover, these qualities are important because they are directly tied to differences in learning. Self-concept and sense of control (attitudes which Barker and Gump and Campbell report are substantially better developed in the small school) were also found by Coleman to be important factors in explaining gaps in cognitive achievement of children in his nationwide study. As Coleman states: "For example, a pupil attitude factor, which appears to have a stronger relationship to achievement than do all the 'school' factors together, is the extent to which an individual feels that he has some control over his own destiny."[1] Coleman further concludes that "the direction such an attitude takes may be associated with the pupil's school experience as well as his experience in the larger community."[2]

Barker and Gump found that participation in classes followed the same pattern as extracurricular participation. They state: "Although more school classes and more varieties of classes were available to them, the large school students participated in fewer classes and in fewer varieties than the small school students."[3] It was also discovered that small school participation included more non-academic subjects such as music arts, shop, and physical education, but fewer academic specialities.

Consistent with their other findings, Barker and Gump report that not only is the actual proportion of children who participate diminished in larger schools, but the larger school is dominated by a small handful of students. For instance, in the case of music performances, the authors state: "Not only was music participation less widespread among junior students of the large school, there was greater concentration of that which did occur within a small circle of relatively few specialists."[4]

Barker and Gump also argue that the small town is both more dependent on its youth and more richly endowed with behavior

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[1]Coleman, Equality of Educational Opportunity.

[2]Ibid., p. 23.

[3]Barker and Gump, Big School, Small School.

[4]Ibid., p. 169.

settings (proportionally) than larger towns. Adolescents were essential performers for significant percentages of the settings in the small towns ranging from 18.5 percent of the settings in one town to 27.5 percent in another. The authors state: "These figures can be viewed as measures of the extent to which the four Midwest County communities were dependent for their functioning upon the performances of high school adolescents, or, conversely, of the degree to which the towns would be crippled for want of performers if the adolescents were removed.[1]

Behavior settings that were deficient in promoting values important for learning were compensated by others in the small Kansas towns studied by Barker and Gump. Since participation rates are much greater in small towns than in large, it can be argued that what the small town high school lacks, the community can compensate, and vice-versa. The authors conclude that small town children live in "behavior settings that were relatively rich in people and behavior."[2] Children in such towns are not isolated, nor are their schools isolated, from the community's vital support system.

The significance of the above in arguing against consolidation lies with the obvious interdependence of the small town high schools and the communities they serve. In each of the small towns studied in Kansas, the town's high school was tightly integrated into the fabric of the community's social life. The communities and their schools were mutually reinforcing. To remove the school from such a community (and thereby alter the reciprocal balance) would be destructive of community. In order to warrant the acceptance of these negative social costs, one would have to argue that consolidation is a demonstrably better strategy for achieving desired educational and economic outcomes. As this paper has indicated, despite decades of advocacy for and experience with consolidation, such benefits have never been persuasively documented.

All in all, it seems clear that consolidation has not been able to live up to the plethora of educational and economic claims made on its behalf. Today, even a few rural educators have recognized and acknowledged this failure. There is considerable significance in the fact that the keynote speaker at the 1974 conference of the National Federation for the Improvement of Rural Education (a mainstream professional association) roused little disagreement by stating that:

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[1]Ibid., p. 157. [2]Ibid., p. 166.

> "At one time, the consolidation of school districts was seen as the way to [secure needed services] for large numbers of students at one time. Not any more, after the sobering experience of more than 20 years of trial leading to the conclusion that big is not synonymous with better . . . The symbols of consolidation--impressive-looking glass, steel, and concrete structures--came to mean little to the student who spent hours getting to one of these superconglomerates and home again, often to receive less than a 'quality education.'"[1]

Why?

Why has there been so much consolidation and reorganization when so little is empirically justified? There are several possible explanations. It is true that school officials have had to cope with a great population redistribution from the countryside to towns and cities. Some consolidation was necessary simply because schools and districts once filled with children suddenly had only a handful. Coping with necessity, however, does not explain why such a massive movement developed.

The movement to consolidate schools was merely one part of an urbanizing, modernizing trend that affected everything in America. Industrialization, coupled with scientific advances in agriculture, unleashed a steady flow of migrants from farm to city, and shattered the traditions and values of rural living. Modernization dictated new values and new organizational forms which emphasized larger scale, specialization, and professionalization. Experts replaced amateurs. Small farms, small businesses, and small schools gave way before the tide of centralization. Those who wished to retain small farms, small communities, and small schools were considered backward, provincial, and non-progressive.

Modernization in government was characterized by a move toward scientific management. Efficiency and economy became the prevailing creed. School size and class size were increased. Much emphasis was placed on per pupil costs. Miniscule savings became important for principals and superintendents to report.[2]

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[1]Gerald J. Kluempke, "The Emerging Role of the Regional Service Center in Rural Areas," Proceedings of the Second National Conference of NFIRE (Washington, D.C.: ERIC/CRESS, 1974), p. 9.

[2]Callahan, Education and the Cult of Efficiency.

The zenith of this business influence on the schools was 1900-30, but the themes linger, particularly in "good government" arguments to rationalize and centralize administration. As Congressman Reuss argues:

> "The number of counties, towns, villages, and special districts could be drastically reduced from its present 81,000 in order to enable local government to obtain adequate geographical powers and revenue sources affectively, to solve local problems, and to eliminate wasteful Lilliputs. Many rural counties too small to be efficient could consolidate with their neighbors for regional cooperation. Archaic township governments--17,000 of them--could be steadily abolished. All told, it could be the greatest decimation of redundant governments since the consolidation of rural school districts under the pressure of state governments in the 1950s."[1]

The rise of the profession of school administration during the days of emphasis on scientific management, contributed further to the movement for centralization. Administrative training in prominent schools of education (Stanford, Columbia, and Chicago) was dominated in the 1920s and 1930s by advocates of consolidation, efficiency, and economy. Their textbooks and their students shaped state university and college administrative training in the 1940s and 1950s.[2] These professionals, many of whom came from one-room elementary schools and small rural high schools, returned home to argue that they had learned better ways.

Still, there was a motivation behind the professional's zeal about consolidation that ran deeper than a simple belief in its intrinsic value. As Tyack perceptively notes:

> " . . . on closer examination rural-school reform becomes not so much a paradox as a transfer of power from laymen to professionals. The rural-school reformers talked about democracy and rural needs, but they believed that they had the answers and should run the schools. . . . And while they justified their program as public service, educators also sought greater power and status for

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[1]Quoted in Elinor Ostrom, "On Righteousness, Evidence and Reform: The Police Story," Urban Affairs Quarterly, vol. 4, no. 4 (June 1975), p. 466.

[2]Callahan, Education and the Cult of Efficiency.

> themselves. What they needed was authority: 'It is the lack of captains and colonels of larger grasp and insight that is today the greatest single weakness of our rural and village educational army. When matched against the city educational army, with its many captains and colonels, and under generals of large insight and effective personal force, the city army easily out-generals its opponent.'"[1]

Money proved to be yet another force motivating professionals to adopt consolidation and reorganization. Many states provided substantial financial incentives and rewards for those local districts willing to accept mergers. At least one state (Vermont) offered increased state revenues to local districts which tried, even unsuccessfully, to bring about consolidation. Many states, such as West Virginia and Indiana, made the availability of state school construction funds contingent upon the acceptance of local consolidation plans. In state after state, the money tail wagged the policy dog.

All of these factors help explain some of the underlying motivations for this movement, but they still do not satisfactorily answer the question of why evidence was accepted when it was frequently so flawed. Educational research was not, and is not, held to very high methodological standards, but that does not seem sufficient to explain why so little research was ever done to determine whether there were advantages to small schools and districts. Why was no voice raised to question the assertions?

First, the arguments for consolidation have tremendous face validity. To argue that economies of scale may not exist, or are very small if they do, or are outweighed by diseconomies, is counterintuitive. To suggest that newer and more modern school buildings with more educated teachers do not necessarily mean that children learn more, turns the educational world on end. Opponents of consolidation generally have not tried to directly refute the advocates. They have argued that factors other than economy and efficiency had great value. They were concerned about local control, about changes in life style, about the loss of the school in their community, and about bigger, less personal institutions.

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[1]Tyack, The System. Note: The quotation Tyack uses here is from Ellwood P. Cubberly, Rural Life and Education: A Study of the Rural School Problem as a Phase of the Rural Life Problem (Boston, Mass.: Houghton, Miffien, 1916).

Since the opponents valued other things, they rarely made any attempt to attack the face validity of the proponent's arguments.

So, the arguments stood. Asserted over and over again, and left unchallenged, they came to be believed. As Ostrom states in an article which reveals that law enforcement, like education, has been subject to massive consolidation based upon specious evidence coupled with strident advocacy:

> "The assertions have been repeated for so many years, and by such righteous groups, that few questions have been raised about their empirical validity."[1]

The symbols of modernization, such as new schools, shiny equipment, and more credentialed teachers were believed to be important in and of themselves. They were also thought to lead to certain ends. Those who did not believe needed to be convinced. Evidence was collected to show that the symbols work. Virtually all of the research was done by people who supported consolidation and wanted to demonstrate to others that it was a good practice. The important thing was to convince others to believe, not to find some objective truth.

The third reason that the evidence was accepted is that performance outcomes of the schools were (and are) hard to measure, and even harder to agree upon. Consolidators thought that children scored higher on achievement tests if they went to multigraded elementary schools. They thought that a broader high school curriculum better prepared students for college. Even if these things were always true (which the evidence indicates they are not), not everyone agrees that they are the most important performance outcomes. Still, if we made a list of other outcomes (ability to relate well to others, creativity, strong self-concept) we would have great difficulty measuring them and comparing them over time. So, most research on consolidation simply focused on the inputs--buildings, teachers, equipment, curriculum--and did not even try to measure and compare outcomes.

Implications for Educational Policy

What do we do now? Go back to little red schoolhouses and start over? Throw out all the professionals who want to reorganize

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[1]Ostrom, "On Righteousness, Evidence and Reform: The Police Story."

and consolidate? Fund an enormous research project to measure the outcomes of consolidated schools? Probably not.

While the policy of rural school and district consolidation is not totally devoid of worth, its strengths were greatly exaggerated, its weaknesses simply ignored, and its overall merits as a strategy for educational reform and improvement grievously overstated and oversold.

For despite the massive human and financial investments made on its behalf, consolidation has not dramatically alleviated the educational problems endemic to rural areas. And, perhaps most damning of all, consolidated units have not even been proven to be more successful than existing small schools and small districts--ones which have had to make do with relatively meager resources and only the scantiest professional attention.

By consolidating, rural communities relinquished the advantages of smallness and received pitifully little in return. Education professionals must bear a special burden of responsibility in this matter for it was their fervent belief in and commitment to the beneficience of consolidation that made it the most successfully implemented policy of the past fifty years. And, there is more than a little irony in the fact that the reform educators implemented most fully is proving to have to few lasting positive consequences.

Three lessons seem important. First, small schools deserve more attention. The education profession's emphasis on bigness largely pre-empted serious discussion and research on methods of maintaining and improving existing small schools and districts. There are values in smallness that are lost with reorganization and consolidation. As detailed earlier, Barker and Gump document some of these in the only piece of counter consolidation research that exists.[1] Barker's conclusion is worth pondering:

> "It may be easier to bring specialized and varied behavior settings to small schools than to raise the level of individual participation in large schools. Furthermore, the current method of broadening educational offerings by moving hundreds of bodies to a central spot may be both unnecessary and old-fashioned."[2]

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[1]Barker and Gump, Big School, Small School.

[2]Ibid.

Second, alternatives to consolidation and reorganization should be seriously considered. The consolidator's intense focus upon structural and managerial issues diverted attention away from critically needed substantive improvements.

Regionalizing particularly expensive programs like vocational education is one alternative to consolidating entire schools and districts. A range of helpful services can (and in some cases are) being provided by regional units to schools and districts desirous of remaining small.

However, while there is a wealth of potential benefits in strategies linking sub-state regional units and individual small schools and districts, there are both actual and potential problems inherent to regionalization which must not be ignored. Foremost among these problems is the fact that regionalization done without sensitivity and imagination could become the precursor of yet another round of even larger local units, more centralized decision-making processes and less and less direct accountability to rural parents, students, and taxpayers.

Nevertheless, the basic point being made here is that many alternatives for good small programs are possible now (and at competitive costs) with a variety of widely available telephone, radio, microwave, and tape systems. Schools can choose very simple two-way telephone hookups with far-away resources, or more complex systems using TV.

Other alternatives include the establishment of a teacher corps system utilizing special subject teachers, paraprofessionals, teaching assistants, and tutors to compensate for educational deficits in rural communities, or the establishment of voluntary collaboratives for special interest activities. The underlying premise here is that resources can be brought to children, rather than forcing children to go to the resources. The benefits of smallness can be coupled with the benefits of specialization.

Third, research done in order to demonstrate the value of a practice should be scrutinized very carefully. It is likely that a researcher brings with him certain assumptions that go unquestioned. If he believes, he wants others to do the same. This problem continues to be prevalent in most educational research. Since the research is all done for professionals by professionals, it would be useful to ponder Cohen and Garet's recommendation for government or foundation funding of research on behalf of groups

other than the state and its constituent school districts.[1] Community groups wishing to advocate the benefits of smallnes in schooling could marshal and present evidence in support of their claims. The decisions about what to do would be political choices among values (which they always have been) but the professional side would no longer be cloaked in scientific rationality.

People came to believe that the values of consolidation were supported by scientific truth. They got their new buildings and shiny equipment. They got highly-credentialed teachers, more specialists, and more professional administrators--some of which they probably would have eventually received anyway. Not surprisingly, their taxes continued to increase, as did per pupil costs.

But even with all their spending and all their new resources, rural people still did not generally receive that which they wanted most dearly--better life chances for their children. For those chances are more surely affected by the education and income of parents, the social and economic character of the community, the investment of time, energy, and love by many adults, and plain luck, than they ever are by the size, newness, or variety of the local school.

Consolidation was deemed a panacea. Only now we discover that panaceas are every bit as mythical in rural education as elsewhere in society. It's an important lesson.

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[1]David Cohen and Michael Garet, "Reforming Educational Policy with Applied Research," Harvard Educational Review, vol. 45, no. 1 (February 1975), pp. 17-43. See particularly pp. 40-43.

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